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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
QIN, YIXING	
ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/943,923	BHASKAR ET AL.	
	Examiner	Art Unit	
	Yixing Qin	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-22 is/are allowed.
- 6) ☒ Claim(s) 1-13, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 14 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>08/31/01, 10/17/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: On page 5, lines 7-8 of paragraph [0021], the sentence "The pattern shown in Fig. 3 comprises a page 10 with a plurality of color swatches 20 disposed in an area 30 on the page." is objected to because items 10, 20, and 30 appear in Fig. 4 and are directed to a test chart, sensor and a comparator. Appropriate correction is required.

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show : a "right image" in Fig. 2. as described in the specification. Page 4, lines 3-6 of paragraph [0018] describes appearances of dots in relation to the background in both a "left image" and a "right image." Fig. 2 of the drawings seems to be disclosing only one image – a "left image."

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary,

the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Allowable Subject Matter

Claims 18 and its dependent claims, 19-22, are allowed. The following is an examiner's statement of reasons for allowance: Matching of patches to background color can be done visually (i.e. by an operator – see Shimazaki – U.S. Patent No. 6,204,873, column 15, lines 31-38) and the density of patches can be measured using a densitometer (see Hadley et al – U.S. Patent No. 5,995,714, column 2, lines 35-41). However, no prior art of record could be found where a component performed the matching of a color of a patch to the color of the background surrounding the patch(es). The examiner would like to note that the word "component" in the third limitation of claim 18 is interpreted to be a piece of machinery (i.e. human eyes are not "components").

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claim 14 and its dependent claim, claim 16, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The reason for the allowance of claim 14 if written in independent format would be the same as above for claim 18. Please also note the objection to claim 14 below.

Claim Objections

Claim 14 is objected to because of the following informalities: Claim 14 is interpreted by the examiner to mean the matching of colored swatches to the background color. Thus, the word "match" should appear somewhere in the claim (as it did in the last limitation of claim 9) to indicate a comparison/matching of the spectral data of the swatches to the background color (i.e. "...a sensor sensing the spectral data of each of a plurality of the color swatches for matching the spectral data to the background color.) This would make the claim language clearer. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

I. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipate by Hadley et al (U.S. Patent No. 5,995,714).

1. Claim 1

A test page produced by ink pens for calibrating drop weights for at least a first and a second printheads, comprising:

- **a page with an area for color swatches;**
- **a plurality of color swatches disposed in said area; and**
- **a predetermined substantially uniform color background disposed in said area between and around said plurality of color swatches.**
- Hadley et al discloses in Fig. 9 a printer test page (column 4, line 6) with a boxed area that includes many test targets (i.e. **are with color swatches**). The background is of a uniform color, white.
- Please also note that targets, patches and swatches all mean essentially the same thing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

II. Claims 4 and 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Hadley et al (U.S. Patent No. 5,995,714).

2. Claim 4

The test page as defined in claim 1, wherein

- **said plurality of color swatches comprises 9-81 color swatches in the area, and wherein the area is substantially a square of 13 or less centimeters.**
- One can see from Fig. 9 of Hadley et al that there are 25 test targets.
- Although the Hadley et al reference does not explicitly disclose the size of the area of the box in Fig. 9, it would have been obvious to one of ordinary skill to simply drop less ink to create smaller target squares or create less target squares to reduce the area taken on a page. The motivation would be so that a user can more easily focus on particular test target without being overwhelmed by a page full of targets.

3. Claim 5

The test page as defined in claim 1, wherein

- **the color swatches are formed from three different colors of ink.**
- Fig. 9 of Hadley et al discloses that the test targets are squares made of 4 colors. Hadley et al also discloses in column 2, lines 3-5 that "...a digital printer...will

usually [have] three or four input color channels." It would have been obvious to use three different colors as well, depending on the type of printer. The motivation would be to print the correct type of color calibration test page for a particular printer.

III. Claims 2, 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hadley et al (U.S. Patent No. 5,995,714) in view of Shimazaki (U.S. Patent No. 6,204,873).

4. Claim 2

The test page as defined in claim 1, wherein

- **said color swatches are of a substantially uniform size, and wherein a dimension of said color swatches is less than a distance in said area between adjacent color swatches.**
- Although the Hadley et al reference discloses that there can be some space between the test patches (i.e. Fig. 9), they do not explicitly disclose that the distance in between the patches can have a larger dimension than the patches themselves.
- However, the secondary reference, Shimazaki, discloses in Fig. 9 (2nd drawing in the figure – especially the area with the dotted circle, marked as “area increases”) and column 16, lines 55-60 that “...it is possible to increase the area of the background portion, which are surrounded by four patches adjacent to one

another...” One would understand that the background could be increased enough so that the space in between the patches is actually larger than the patches themselves.

- Both references are in the art of color calibration using patches/targets. This will serve as the motivation for the combination of these two references from hereon. Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to have made a test page with larger background portions than patch/target portions. The motivation would be to allow an user to more easily see and distinguish between the various shades of the patches/targets.

5. Claim 3

The test page as defined in claim 2, wherein

- **each of the plurality of color swatches are substantially square.**
- One can see from Fig. 9 of Hadley et al that the test targets are square.

6. Claim 6

The test page as defined in claim 1, wherein

- **the background color is gray made from black ink.**
- The background disclosed in the Hadley et al reference is white, and Hadley et al makes no suggestions for another background color. However, the secondary reference, Shimazaki discloses in Fig. 8 that the area around the various test patches is gray in color.

- Shimazaki further discloses in column 3, lines 58-66 that "...[when] a black color ...is outputted as a reference for judging a gray balance as a background color of...the gray balance can be judged accurately..."
- Both references are in the art of color calibration for a printing device. This will serve as the motivation for the combination of these two references from hereon. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a gray background. The motivation would be to use the background as a reference for judging colors.

7. Claim 7

The test page as defined in claim 1, wherein

- **the test page includes a second plurality of color swatches disposed in a second area on the test page, wherein**
- Although Hadley et al discloses the use of color patches for color calibration, it does not explicitly disclose that there could be two areas on a page with different colors. However, the secondary reference, Shimazaki, discloses in Fig. 7 [step 2] and fig. 12, that two different sets of patches can be printed in two areas on a page. The motivation would be to be able to test two different types of color testing. This would save space on a page and would allow an user to more easily identify possible calibration errors if both test areas show, for example, that one color is off as compared to the others.

- **the first-mentioned plurality of color swatches are formed by holding one color ink constant across the swatches and varying two other color inks, and wherein**
- Hadley et al discloses in Fig. 7 a variety of values assigned to R, G, and B. One can see that when looking at the columns, the value for R are the same for all values in that column for any given column (i.e., when $x = 0$, and $y = \text{any value}$, the value for R is set to 0.00). The values of G and B are varied.
- **the second plurality of color swatches are formed by holding different color ink constant across the swatches as compared to the ink held constant in the first-mentioned plurality of color swatches and varying two other color inks.**
- The secondary reference, Shimazaki discloses in Fig. 9 (top picture in the figure) that the color cyan is held constant, while the density of magenta and yellow are varied from low to high. In column 15, lines 31-48, Shimazaki explains that this is for judging a gray bias and further explains the various steps involved. The motivation for holding a color constant is to be able to more easily identify which colors need calibration because the amount of colors to be varies is reduced. Also, discrepancies in both test areas could more easily identify which color(s) need(s) calibration.

IV. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hadley et al (U.S. Patent No. 5,995,714) in view of Michel (International Pub. No. WO 00/36819).

8. Claim 8

The test page as defined in claim 1, wherein

- a center color swatch disposed in substantially a center of the area containing the plurality of color swatches provides a color from a current setting of ink pens, and wherein a variation of ink drop volumes in a given color swatch relative to ink drop volumes in the center color swatch is dependent on a distance and direction of the given color swatch relative to the center color swatch.
- Hadley et al discloses in Fig. 7 that RGB colors are dispersed in a 5 x 5 square area, with the center square being set to 0 for all colors. One can see the RGB numbers vary as they get farther away from the center square. Hadley et al discloses in column 5, lines 36-45 that these numbers are speed shift values, and explains their relevance to color calibration. However, Hadley et al, does not explicitly disclose that the center area is a current setting of pens.
- The secondary reference, Michel, discloses in Fig. 2 a bar indicating "the current gray balance of your printer." On page 10 lines 26-28, Michel discloses that "First, the C,M,Y gray of the printer is a patch printed at the center of the target 125. The C,M,Y variations of the gray are located around the central patch"

- Both references are in the art of color calibration for a printer. This will serve as the motivation for the combination of these two references from hereon.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have printed a test page with a center area having a current setting of pens for a printer. The motivation would be to use the current setting as a reference point for calibration.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

V. Claims 9, 13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipate by Shimazaki (U.S. Patent No. 6,204,873).

9. Claim 9

A method for calibrating color pens for an inkjet printer that includes one or more first printheads and one or more second printheads, comprising the steps of:

- **printing a test page from the inkjet printer to be calibrated, wherein**
- **the test page comprises a plurality of color swatches disposed in an area, wherein**
- Shimazaki discloses in Fig. 7 three different printed pages with different color patches for test printing.
- **each of the plurality of color swatches is made from inks from the one or more first printheads, and wherein**
- Shimazaki focuses in on one of the charts in Fig. 7 and shows that it is made up of C, M, Y and K colors.
- **a predetermined substantially uniform color background made from at least one ink from said one or more second printheads is disposed in said area between and around said plurality of color swatches; and**
- One can see in Fig. 8 of Shimazaki that the background between and around the patches is grayish in color.
- **selecting a color swatch which matches the closest to the color background.**
- Shimazaki discloses in column 15, lines 31-38 that “...by comparing with the black color of the background color, the operator judges the color patch having

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the best gray balance (the color patch which is not biased to any of C, Y, and M) visually, from the color patches of the gray correction reference chart, for each of the density steps of highlight, middle and shadow. "

10. Claim 13

The method as defined in claim 9, wherein

- **the background color is gray made from black ink.**
- One can see in Fig. 8 of Shimazaki that the background between and around the patches is grayish in color.

11. Claim 15

The method as defined in claim 9, wherein

- **the selecting step is performed manually.**
- Shimazaki discloses in column 15, lines 31-38 that "...by comparing with the black color of the background color, the operator judges the color patch... "

VI. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimazaki (U.S. Patent No. 6,204,873).

12. Claim 10

The method as defined in claim 9, wherein

- **said color swatches are of a substantially uniform size, and wherein a dimension of said color swatches is less than a distance in said area between adjacent color swatches.**
- Shimazaki, discloses in Fig. 9 (2nd drawing in the figure – especially the area with the dotted circle, marked as “area increases”) and column 16, lines 55-60 that “...it is possible to increase the area of the background portion, which are surrounded by four patches adjacent to one another...” Even though it is not explicitly stated that the area around the patches is larger than the patches, one would understand that the background could be increased enough so that the space in between the patches are actually larger than the patches themselves or this is simply an extension of what the reference teaches. The motivation is to facilitate the comparison of the patches to the background for color calibration.

13. Claim 11

The method as defined in claim 10, wherein

- **each of the plurality of color swatches is substantially square.**
- One can see that the patches in Fig. 8 of Shimazaki are square.

14. Claim 12

The method as defined in claim 9, wherein

- **said plurality of color swatches comprises 9-81 color swatches in the area, and wherein the area is substantially a square of 13 or less centimeters.**

- Although there are 84 (21 x 4) squares in Fig. 8 of Shimazaki, one would understand that changing the interval of the DOT% from 5% to some higher percentage would reduce the number of patches.
- Although the Shimazaki reference does not explicitly disclose the size of the area of the box in Fig. 9, it would have been obvious to one of ordinary skill to simply drop less ink to create less number of patches or create fewer patches to reduce the area taken on a page. The motivation would be so that a user can more easily focus on particular test patch without being overwhelmed by a page full of patches.

VII. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimazaki (U.S. Patent No. 6,204,873) in view of Michel (International Pub. No. WO 00/36819).

15. Claim 17

The method as defined in claim 9, wherein

- a center color swatch disposed in substantially a center of the area containing the plurality of color swatches provides a color from a current setting of ink pens, and wherein a variation of ink drop volumes in a given color swatch relative to ink drop volumes in the center color swatch is dependent on a distance and direction of the given color swatch relative to the center color swatch.

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- Although Shimazaki discloses in Fig. 8, a variation of colors, it does not show that a center area is a current setting of pens.
- The secondary reference, Michel, discloses in Fig. 2 a bar indicating "the current gray balance of your printer." On page 10 lines 26-28, Michel discloses that "First, the C,M,Y gray of the printer is a patch printed at the center of the target 125. The C,M,Y variations of the gray are located around the central patch"
- Both references are in the art of color calibration for a printer. This will serve as the motivation for the combination of these two references from hereon.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have printed a test page with a center area having a current setting of pens for a printer. The motivation would be to use the current setting as a reference point for calibration.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yixing Qin whose telephone number is (571)272-7381. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (571)272-7402. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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